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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,895	12/27/2001	Moshe Gavish		1269

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EXAMINER

PHAN, HANH

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/026,895

Applicant(s)

GAVISH, MOSHE

Examiner

Hanh Phan

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Israel on 12/31/2000. It is noted, however, that applicant has not filed a certified copy of the Israel application as required by 35 U.S.C. 119(b).

### *Drawings*

2. The drawings are objected to **because the blank boxes are not labeled in Figures 1-3. For examples, in figure 1, the blank boxes 1, 2, 3, 4, 5, 6, 7, 8 and 9 are not labeled. In figure 2, the blank boxes 11, 12, 13, 14, 15, 16 and 17 are not labeled . In figure 3, the blank boxes 25, 27, 29, 31, 39, 32, 30, 28, 26 and 38 are not labeled.** Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

Art Unit: 2633

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Medved et al (US Patent No. 5,818,619) in view of Sanders et al (US Patent No. 5,912,910).

Regarding claim 1, referring to figures 1 and 4, Medved discloses an optical wireless communication system including:

a transmitter (i.e., universal converter unit 10 including a RXU 24, a buffer 25 and an airlink transmitter 26, Fig. 1) that receives wavelength L1 and down converts it to wavelength L2 for transmission through the atmosphere (col. 5, lines 14-46);

a receiver (i.e., universal converter unit 56 including an airlink receiver, Fig. 4) where the radiation L2 is up converted back to wavelength L1 (col. 6, lines 49-67). the transmitter and receiver include collimating optics (i.e., lenses 27 and 23, Fig. 1).

Medved differs from claim 1 in that he fails to teach the transmitter and receiver include a non-linear crystal and a laser pump and the wavelength L2 greater than the wavelength L1. However, Sanders in US Patent No. 5,912,910 teaches an transmitter include a non-linear crystal and a laser pump and the wavelength L2 greater than the wavelength L1 (Figs. 1A, 1B, 1C and 1D, col. 6, lines 27-67 and col. 7, lines 1-20). Therefore, it would have been obvious to one having skill in the art at the time invention was made to incorporate the transmitter include a non-linear crystal and a laser pump and the wavelength L2 greater than the wavelength L1 as taught by Sanders in the system of Medved. One of ordinary skill in the art would have been motivated to do this since Sanders suggests in column 6, lines 27-67 and col. 7, lines 1-20 that using such the transmitter include a non-linear crystal and a laser pump and the wavelength L2 greater than the wavelength L1 have advantage of allowing providing a mid-infrared wavelength using for communicating data over a free space optical link to overcome the atmospheric conditions as fog.

Regarding claim 2, the combination of Medved and Sanders teaches the non-linear elements are formed from quasi-phase matched crystals sintered together (Figs 1A-1D of Sanders).

Regarding claim 3, the combination of Medved and Sanders teaches both transmitter and receiver elements in each side of the transmission range (Figs. 1 and 4 of Medved).

Art Unit: 2633

Regarding claim 4, it would have been obvious to obtain the same crystal, same pump laser or same optics are used for the up and down conversion functions in order to save space and reduce the weight and cost.

Regarding claims 5, 6 and 8, the combination of Medved and Sanders teaches where L1 is in the near infrared and L2 is in the mid Infrared wavelength (col. 6 of Sanders, lines 28-40).

Regarding claim 7, the combination of Medved and Sanders teaches where the down conversion is performed by the difference frequency generation and the up conversion is performed by the sum frequency generation (col. 1 of Sanders, lines 40-52).

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

  
**HANH PHAN**  
**PRIMARY EXAMINER**